

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 9

**PROPOSAL:** Recognize Revenue and Appropriate Funds to Develop Low-Cost Sensor Network for Monitoring PM Emissions from Waste Disposal and Recycling Facility

**SYNOPSIS:** SCAQMD and Rainbow Transfer/Recycling Inc. (Rainbow) have entered into a Stipulated Order for Abatement to resolve their dispute over application of Rule 410 and to achieve compliance with the Rule's enclosure requirement. Pursuant to the agreement set forth in the Stipulated Order for Abatement, Rainbow contributed \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions from the facility using low-cost sensors. This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount to the Science & Technology Advancement Budget to support the development and implementation of a PM monitoring sensor network.

**COMMITTEE:** Technology, February 19, 2016; Recommended for Approval

**RECOMMENDED ACTION:**

Recognize revenue of \$40,000 into the General Fund and appropriate this amount from the General Fund Unassigned (Undesignated) Fund Balance into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget (Org 43), Services and Supplies Major Object, Small Tools, Instruments, Equipment Account.

Barry R. Wallerstein, D.Env.  
Executive Officer

MMM:LT:AP

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**Background**

Rainbow Transfer/Recycling Inc. (Rainbow) is a waste disposal and recycling facility located in Huntington Beach that operates within the jurisdiction of the SCAQMD. SCAQMD has issued several Notices of Violation (NOVs) to Rainbow for creating a public nuisance from odor and potential fugitive PM emissions, for not conducting part of their operations under a required enclosure, and, more specifically, for allegedly violating District Rules 402 and 410 and Health and Safety Code Section 41700. SCAQMD and Rainbow have entered into a Stipulated Order for Abatement to resolve the NOVs received. One of the agreements set forth in the Stipulated Order for

Abatement requires Rainbow to contribute \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions using low-cost sensors.

Through the recently established AQ-SPEC Program, SCAQMD has been systematically testing and evaluating a multitude of low-cost sensors. This work has allowed staff to identify several potential PM sensors to be used in a fenceline monitoring demonstration.

### **Proposal**

This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget to support the development and implementation of a PM monitoring sensor network. The objective of this study is to design and deploy a fenceline PM monitoring network near and around the Rainbow facility. This will provide the operator and SCAQMD with real-time feedback on potential fugitive PM emissions originating from the facility and an opportunity to optimize ongoing PM control efforts.

A small network of up to 15 sensors will be deployed upwind, downwind and at the fenceline of the Rainbow facility to monitor potential fugitive PM emissions from onsite activities. All sensor devices (nodes) will be installed at secure locations inside or outside the facility perimeter, tied to light poles or deployed at other private and public places nearby. Each sensor node will have one Alphasense OPC-N2 particle counter, or similar PM sensor, for measuring PM1, PM2.5 and PM10 and will be powered either using solar panels or by connecting it to a power source. Staff proposes a 900 MHz wireless mesh network to connect sensor nodes to each other and to a central server for data storage and processing. Data will be monitored in real time at one-minute time resolution and email alerts will be sent to SCAQMD staff when PM levels exceed a pre-defined threshold.

### **Benefits to SCAQMD**

This work will provide detailed monitoring information on potential PM emissions from Rainbow, allow mapping of real-time ambient PM levels from the facility, and optimize the efficacy of PM control efforts with the ultimate goal of ensuring improved compliance, better air quality and reduced complaints from neighboring communities. Additionally, it will serve as a template for developing future air monitoring networks based on low-cost sensor technology for other stationary sources and provide real-time feedback on the efficiency of mitigation efforts undertaken.

### **Resource Impacts**

Sufficient funding for this effort is available from the Stipulated Order for Abatement between Rainbow and SCAQMD and shall be recognized into the General Fund and appropriated into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget, Services and Supplies Major Object, upon Board approval.